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Additions to the ascidian fauna of India

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Abstract. — Two polyclinid ascidians are added to the marine fauna of India. *Aplidium multiplicatum* is a widely distributed species in tropical waters. *Sidnyum indicum* is a new species belonging to a genus hitherto unknown in the tropical Indian ocean.

Résumé. — Deux Ascidies polyclinidées s'ajoutent à la faune marine indienne. *Aplidium multiplicatum* a une vaste répartition dans les eaux tropicales. *Sidnyum indicum* est une espèce nouvelle appartenant à un genre encore inconnu dans l'océan Indien tropical.

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Ascidian taxonomical work in India is meagre. Recently three species of three genera have been reported (Renganathan, 1981, 1982) from the shore near Tuticorin. This paper deals with two other species from the same area : *Sidnyum indicum* n. sp. interesting as the genus has never been recorded in the Indian ocean (except the Antarctic), and *Aplidium multiplicatum* Sluiter, 1909, previously known from Malaysia, Philippines, North-West and East of Australia, Palau and Gilberts islands, and Japan. Its presence in the South of India is a wide extension toward the western part of the distribution area of this species.

Sidnyum indicum n. sp.

Only one colony has been collected, in the Tuticorin harbour area (48°48′ N-78°11′ E) at a depth of about 10 m. It was attached to a large boulder. This colony was unfortunately damaged during the trip between India and France, but this holotype is deposited in the National Museum of Natural History in Paris under the number A 1 SID B 34. Some zooids of the holotype mounted on slides are deposited in the national collection of zoological survey of India, Calcutta.

The colony was massive, gelatinous, semitransparent, measuring 125 mm in diameter and 35 mm in height. When living the colour was reddish-brown. The colony was attached by its whole base, without pedunele.

The zooids are numerous, thread-like (fig. 1 A), very irregularly placed and apparently do not make regular systems ; the post-abdomens are often crossed with one another. The length of the zooids varies with the development of the gonads but may reach 22 mm, the thorax and abdomen not exceeding 4 mm.

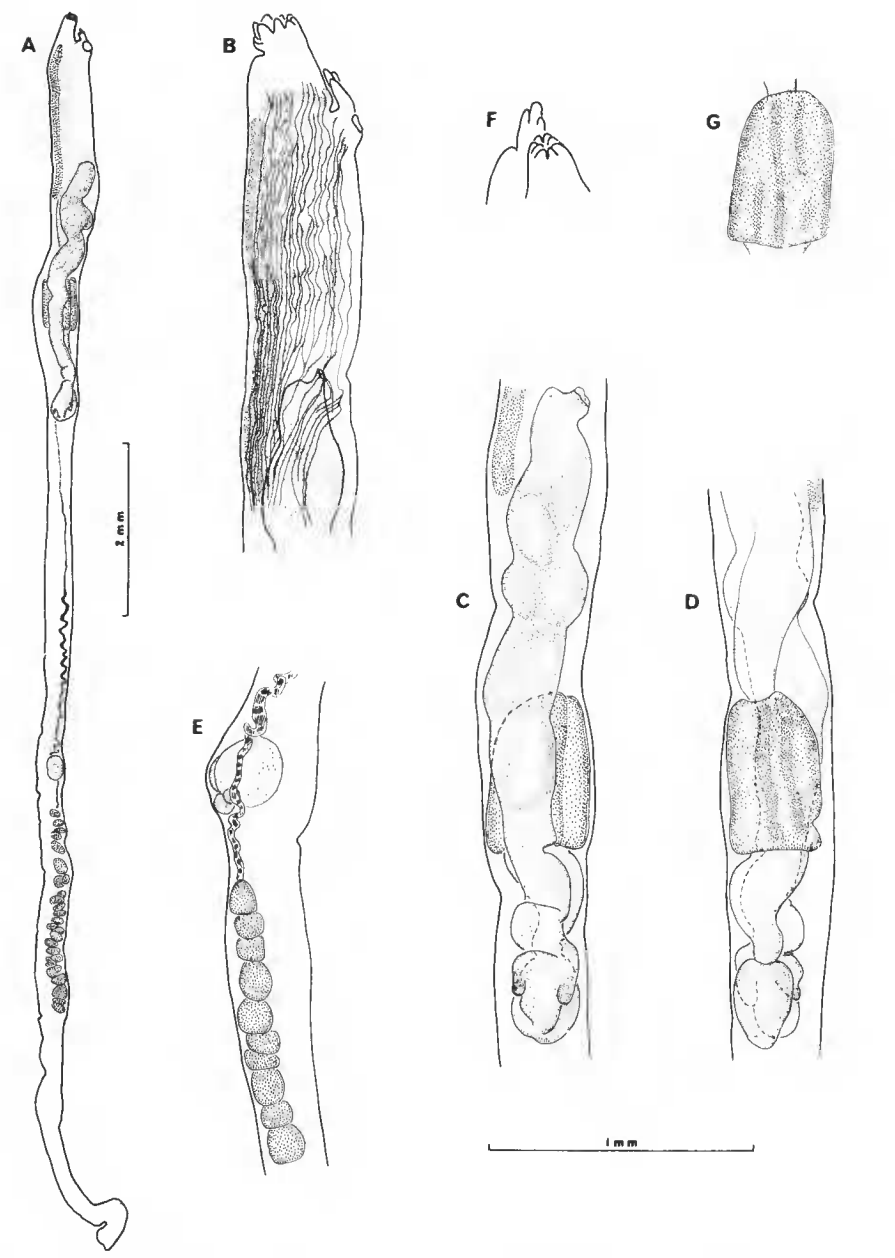

FIG. 1. — *Sidnyum indicum* n. sp. : A, zooid ; B, thorax ; C and D, digestive loop ; E, ovary and part of the testes ; F, oral aperture and cloacal languet ; G, plications of a stomach.

The oral aperture shows 8 rounded lobes (fig. 1 F). The cloacal aperture is located very high in the thorax at the level of the first row of stigmata. It is narrow and bears a short languet, ending in 1 to 4 denticles, but generally cut in three lobes, the median a little larger than the others (fig. 1 B and F). The longitudinal musculature is strong, consisting of at least 12 bundles on each side of the thorax (fig. 1 B), and extending down to the lower end of the post-abdomen. The narrow branchial sac has (7-10) but generally 9 rows of stigmata. We have counted about 10 stigmata per half row. The transverse vessels are wide. The short dorsal languets are not displaced on the left side.

In some zooids one egg was present in the cloacal cavity, but not fully developed larvae were found.

There is no constriction between thorax and abdomen. The œsophagus is wide and short, the stomach cylindrical with 5 or 6 plications, one of them shorter and incomplete (fig. 1 D and G). The first part of the intestine, conical without any transverse swelling, is separated by a constriction from the cylindrical mid-intestine. Just above the curve of the intestinal loop, two cæca can be seen when the gut is empty (fig. 1 C). The bilobed anus opens at the level of the sixth stigmatal row or below.

The post-abdomen is very long and narrow. The ovary is located far under the intestinal loop, followed immediately by testes streching out in a line but not reaching the cardiac extremity (fig. 1 A and E).

This new species does not show any striking character except the low position of the ovary. It is the only *Sidnyum* recorded in the Indian Ocean north of Kerguelen island. Among the 16 other species of the genus, most are Atlantic or Antarctic species except one described by Brewin, 1956, under the name *Aplidium mernooensis* from New Zealand and another : *Aplidium pseudobesum* (Kott, 1963) collected in the South of Australia.

The difference between the genera *Aplidium* and *Sidnyum* is the number of oral lobes only. This character has been often neglected in the descriptions, so the genus *Sidnyum* possibly may be more frequent than suggests the litterature.

Aplidium multiplicatum Sluiter, 1909

Aplidium multiplicatum Sluiter, 1909 : 101, fig. 5, pl. 5, Malaysia ; Hartmeyer, 1909-1911 ; Kott, 1963 : 103, fig. 15, NE Australia ; Millar, 1975 : 247, fig. 34, Indonesia.

? *Aplidium multiplicatum* ; Millar, 1963 : 693, fig. 4, NW Australia.

Amaroucium multiplicatum ; Van Name, 1918 : 165, fig. 113, pl. 31 fig. 26, Philippines ; Tokioka, 1954 : 76, fig. 1, pl. 5, Japan ; Tokioka, 1967 : 35, fig. 8, 9, Palau and Gilberts islands ; Nishikawa and Tokioka, 1976 : 379, fig. 1, 2, Japan ; Nishikawa, 1980 : 99.

non *Amaroucium multiplicatum* ; Tokioka, 1953 : 180, pl. 5 fig. 1-4 being according to Tokioka, 1967 : *A. sagamiense*.

Numerous colonies were collected at Mandapam (9°16′45″ N-79°9′10″ E) and Pamban (9°16′40″ N-79°13′32″ E). They were attached to the leaves of a marine phanerogam, and to the rocks, and some were strewn over the beach. The largest colony collected is 24 × 13 mm and 10 mm in thickness. Although they are of differents shapes, spherical colonies are more common. They are jelly-like. The surface is smooth, free of foreign

matter. Systems are not clear, but in a few colonies the arrangment of zooids is stellate. Faecal pellets are not retained inside the colony. The test is soft, gelatinous, transparent, sporadically impregnated with small spherical bodies of grey pigment.

Zooids measure from 2 to 8 mm, most being about 5 mm in length. Extended thoraces may reach 3 mm length. Zooids are usually perpendicular to the surface of the colony. In freshly collected specimens, the stomach, ova and young embryos are yellowish in colourless zooids. The branchial aperture has 6 simple lobes. The cloacal aperture is enlarged as a funnel ; its upper part bearing a short, thin and simple languet. There is an average of 16 tentacles of two sizes. The dorsal languets are shorter than the stigmata, finger-shaped and displaced to the left side for the distance of two to four stigmata. From near the oral aperture, on each side of the thorax, 10 longitudinal muscles descend before branching to about 15 to 20 muscles. Those towards the atrial cavity run obliquely. Minute transverse branches connecting these longitudinal muscles are also present. Stigmatal rows are 6 to 8, with 16 to 18 stigmata in each half row. The stigmata are interrupted along the dorsal line against the rectum. The transverse bars bear horizontal membranes with a smooth margin. The stomach is barrel-shaped, located in the middle of the abdomen. The longitudinal plications are about 20 to 30 ; some are oblique, some interrupted. The first part of the intestine is widened just before the first constriction. The second part is cylindrical and constitutes the loop. The posterior intestine begins after a constriction but does not show caeca. The anus is bilobed and opens at the level of the second or third row of stigmata. The alimentary canal is not twisted. The post-abdomen is short. The testes follicles (8 to 40) are clustered in a mass immediately posterior to the ovary. The sperm duct is straight and thin. A maximum of 4 embryos was found in the atrial cavity.

The present form very well corresponds to the descriptions of Tokioka, Nishikawa and Tokioka and Millar. The general shape of the zooids is the same (apertures, thorax, stomach, post-abdomen). The aspect of the colonies may represent a geographical variation as the presence of this species in the South of India extends the previous geographical distribution toward the West.

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